



Case No. 4264C5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

) Group Art Unit: 1637

Livak et al.

) Examiner: J. Riley

Serial No.: 09/627,753

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Filed: July 28, 2000

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For: **Hybridization Assay Using Self-
Quenching Fluorescence Probe**

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Confirmation No. 2446

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Application No. 09/627,753
Reply to Office Action of September 29, 2003

quencher molecule quenches the fluorescence of the reporter molecule, and at least one conformation when hybridized to the target where the fluorescence intensity of the reporter molecule is unquenched, such that the ratio of the fluorescence intensities of the reporter molecule to the quencher molecule when the probe is hybridized to the target is greater than the ratio when the probe is single-stranded. The fluorescence of the reporter molecule is then monitored, wherein an increase in the fluorescence intensity of the reporter molecule indicates the presence of the target sequence.

Bagwell et al. teaches a "Unifluor" probe two-hairpin oligonucleotide that changes conformation when bound to a complementary sequence, resulting in an increase in fluorescence.

Urdea is cited as teaching detection of polynucleotides employing a solid support.

However, there is no suggestion in the cited references, whether express or implied, of combining the features of these references to arrive at the presently claimed invention. Only in hindsight could the present claims have been deemed to be obvious, as there appears to be no teaching or suggestion of the present invention, wherein a probe as recited in claims 39-40 is contacted with a nucleic acid sample and the reporter is monitored, wherein an increase in the fluorescence intensity of the reporter molecule indicates the presence of the target sequence. In the absence of motivation in the cited art to combine the teachings thereof to arrive at the present invention, the claims cannot be considered obvious. Withdrawal of the rejection is therefore respectfully requested.

Fee Authorization

Should any fee be necessary for timely entry of this paper, please charge **Deposit Account No. 01-2213 (Order No. 4264C5)**. Any deficiency or overpayment should be charged or credited to this deposit account.

Respectfully submitted,

Date: March 29, 2004

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